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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,353	01/16/2004	Kenji Fujino	032149	5301

38834 7590 04/10/2007
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EXAMINER	
CUTLER, ALBERT H	
ART UNIT	**PAPER NUMBER**
2622	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/758,353	Applicant(s) FUJINO ET AL.	
	Examiner Albert H. Cutler	**Art Unit** 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is responsive to application 10/758,353 filed on January 16, 2004. Claims 1-8 are pending in the application and have been examined by the examiner.

Information Disclosure Statement

2. The Information Disclosure Statement (IDS) mailed on January 16, 2004 was received and has been considered by the examiner.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-3, and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okawara(U.S. Patent Application Publication 2002/0041334) in view of Matsushima(U.S. Patent Application Publication 2003/0099407).

Consider claim 1, Okawara teaches:

A camera system(figures 6a and 6b, paragraphs 0087-0108) for obtaining optimum images(paragraph 0107) by controlling a compression curve(paragraph 0108) for the dynamic range of an image sensor("image pickup elements", 201, 202, and 203. A gamma curve(i.e. compression curve) is generated which emphasizes low luminance components and suppresses high luminance components, paragraph 0108.) according to the brightness of a subject(Said compression curve is generated based on a luminance signal, paragraph 0108.), comprising:

an iris(103, figure 6a) for adjusting the amount of light introduced to said image sensor(see figures 6a and 6b);

an iris driver(109, figure 6a, paragraph 0089) for driving said iris(103);

an iris controller("microcomputer", 116, figure 6a, paragraph 0089) for determining an iris value according to the image data of said image sensor in order to let said iris driver make an iris value correction accordingly(The iris controller(116) uses luminance level information(i.e. image data) from the camera to calculate iris control information(i.e. iris values), and control the iris accordingly via the iris driver, paragraph 0094.); and

Okawara teaches of a gamma circuit(308), which converts an input signal using a preset gamma curve(i.e. compression curve), paragraph 0108. However, Okawara does not explicitly teach of a dynamic range adjuster for correcting said compression curve according to the image data of said image sensor.

Like Okawara, Matsushima uses luminance information obtained with a camera to correct image quality(paragraphs 0069-0116). Matsushima also similarly uses compression curves(see figure 30) to obtain a more desirable image(paragraph 0157).

In addition to the teachings of Okawara, Matsushima teaches of a dynamic range adjuster("Dynamic Range Setting Part", 4, and "Processing Part", 5, 204, figure 1, figure 22) for correcting said compression curve according to the image data of said image sensor(The compression curve is corrected based on a variety of image characteristics obtained via histograms of the image data obtained, see paragraphs 0149-0162, noting especially paragraph 0157.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include a dynamic range adjuster as taught by Masushima for correcting the compression curve taught by Okawara for the benefit of preventing an

inappropriate contrast state when photographing(Matsushima, paragraph 0012), and avoiding destruction or deterioration of contrast in the image due to over-correction(Matsushima, paragraph 0016).

Consider claim 2, and as applied to claim 1 above, Okawara further teaches:

said iris controller(116) comprises:

an average luminance calculator for determining the average luminance of said image data(The "average luminance" is calculated and set by the iris controller(116), paragraph 0094.); and

an iris calculator for calculating an iris value at which the average luminance of said average luminance is adjusted to a desired average luminance(The microcomputer(116) also acts as the iris calculator, setting(i.e. adjusting) the average luminance to a predetermined level, see paragraph 0094), in order to let said iris driver(109) make an iris value correction accordingly(paragraph 0094).

Consider claim 3, and as applied to claim 1 above, Okawara further teaches:

Said iris controller(116) comprises:

an iris calculator for calculating an iris value(The microcomputer(116) also acts as the iris calculator, setting(i.e. adjusting) the average luminance to a predetermined level, see paragraph 0094), at which the distribution of said dark area is shifted to a desired position(The gamma circuit(308) is used to generate a signal with emphasized low luminance signal components(i.e. the dark area is shifted to a desired position),

paragraph 0108.), in order to let said iris driver(109) make an iris value correction accordingly(paragraph 0094).

However, Okawara does not explicitly teach of a histogram calculator for determining the luminance histogram of said image data, or a distribution position detector for detecting the distribution of a dark area according to the luminance histogram of said histogram calculator.

Matsushima teaches a histogram calculator for determining the luminance histogram of said image data(see figures 10-14), and a distribution position detector("determination part", 2, figure 1) for detecting the distribution of a dark area according to the luminance histogram of said histogram calculator(The distribution detector detects the distribution of the entire luminance histogram(i.e. the distribution of a dark area is determined), and determines if the distribution is skewed, or well balanced, see paragraphs 0083-0086).

Consider claim 5, Okawara teaches:

A camera control method(paragraphs 0087-0108) for obtaining optimum images(paragraph 0107) by controlling a compression curve for the dynamic range of an image sensor(paragraph 0108) for the dynamic range of an image sensor("image pickup elements", 201, 202, and 203. A gamma curve(i.e. compression curve) is generated which emphasizes low luminance components and suppresses high luminance components, paragraph 0108.) according to the brightness of a subject(Said

compression curve is generated based on a luminance signal, paragraph 0108.), comprising the steps of:

iris control for determining an iris value according to the image data of said image sensor, in order to let an iris driver control an iris for adjusting the amount of light introduced to said image sensor(see paragraphs 0089-0094, claim 1 rationale);

Okawara teaches of a gamma circuit(308), which converts an input signal using a preset gamma curve(i.e. compression curve), paragraph 0108. However, Okawara does not explicitly teach of a dynamic range adjuster for correcting said compression curve according to the image data of said image sensor.

Like Okawara, Matsushima uses luminance information obtained with a camera to correct image quality(paragraphs 0069-0116). Matsushima also similarly uses compression curves(see figure 30) to obtain a more desirable image(paragraph 0157).

In addition to the teachings of Okawara, Matsushima teaches of a dynamic range adjuster("Dynamic Range Setting Part", 4, and "Processing Part", 5, 204, figure 1, figure 22) for correcting said compression curve according to the image data of said image sensor(The compression curve is corrected based on a variety of image characteristics obtained via histograms of the image data obtained, see paragraphs 0149-0162, noting especially paragraph 0157.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include a dynamic range adjuster as taught by Masushima for correcting the compression curve taught by Okawara for the benefit of preventing an inappropriate contrast state when photographing(Matsushima, paragraph 0012), and

avoiding destruction or deterioration of contrast in the image due to over-correction(Matsushima, paragraph 0016).

Consider claim 6, and as applied to claim 5 above, Okawara further teaches:

Said iris control step includes the steps of:

average luminance calculation for determining the average luminance of said image data(The “average luminance” is calculated and set by the iris controller(116), paragraph 0094.); and

iris calculation for calculating an iris value at which said average luminance is adjusted to a desired average luminance, in order to let said iris driver make an iris value correction accordingly(The microcomputer(116) also acts as the iris calculator, setting(i.e. adjusting) the average luminance to a predetermined level, see paragraph 0094.), in order to let said iris driver(109) make an iris value correction accordingly(paragraph 0094).

Consider claim 7, and as applied to claim 5 above, Okawara further teaches:

iris control step includes the steps of:

iris calculation for calculating an iris value(The microcomputer(116) also acts as the iris calculator, setting(i.e. adjusting) the average luminance to a predetermined level, see paragraph 0094) at which said dark- area distribution is shifted to a desired position(The gamma circuit(308) is used to generate a signal with emphasized low luminance signal components(i.e. the dark area is shifted to a desired position),

paragraph 0108.), in order to let said iris driver(109) make an iris value correction accordingly(paragraph 0094).

However, Okawara does not explicitly teach a histogram calculation for determining the luminance histogram of said image data(see figures 10-14), and distribution detection for detecting the distribution of a dark area according to said luminance histogram.

Matsushima teaches a histogram calculation for determining the luminance histogram of said image data, or distribution detection for detecting the distribution of a dark area according to said luminance histogram(The distribution detector(2, figure 1) detects the distribution of the entire luminance histogram(i.e. the distribution of a dark area is determined), and determines if the distribution is skewed, or well balanced, see paragraphs 0083-0086).

8. Claims 4/1, 4/2, 4/3 and 8/5, 8/6, and 8/7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okawara in view of Matsushima as applied to claims 1-3, and 5-7 above, and further in view of McCaffrey et al.(U.S. Patent 6,992,713).

Consider claim 4, and as applied to claim 1 above, Okawara teaches of an image sensor("image pickup elements", 201, 202, and 203, figure 6b). However, the combination of Okawara and Matsushima does not explicitly teach that the image sensor is a CMOS sensor.

McCaffrey et al. is similar to Okawara and Matsushima in that a camera is used(figure 1, column 3, lines 25-47), and that a histogram is produced(510, figure 5). McCaffrey et al. is also similar in that the camera is adjusted to improve images with high luminosity and low dynamic range(512, figure 5, column 6, line 27 through column 7, line 11).

In addition to the teachings of Okawara and Matsushima, McCaffrey et al. teach that the image sensor is a CMOS image sensor(110, figure 1, column 3, lines 25-47).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use a CMOS image sensor as taught by McCaffrey et al. as the image sensor taught by the combination of Okawara and Matsushima for the benefit that a CMOS imager and control circuitry can be fabricated on a single chip to conserve space, and a CMOS imager requires low power and still provides a high quality image(McCaffrey et al., column 1, lines 13-17).

Consider claim 4, and as applied to claim 2 above, Okawara teaches of an image sensor("image pickup elements", 201, 202, and 203, figure 6b). However, the combination of Okawara and Matsushima does not explicitly teach that the image sensor is a CMOS sensor.

McCaffrey et al. is similar to Okawara and Matsushima in that a camera is used(figure 1, column 3, lines 25-47), and that a histogram is produced(510, figure 5). McCaffrey et al. is also similar in that the camera is adjusted to improve images with

high luminosity and low dynamic range(512, figure 5, column 6, line 27 through column 7, line 11).

In addition to the teachings of Okawara and Matsushima, McCaffrey et al. teach that the image sensor is a CMOS image sensor(110, figure 1, column 3, lines 25-47). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use a CMOS image sensor as taught by McCaffrey et al. as the image sensor taught by the combination of Okawara and Matsushima for the benefit that a CMOS imager and control circuitry can be fabricated on a single chip to conserve space, and a CMOS imager requires low power and still provides a high quality image(McCaffrey et al., column 1, lines 13-17).

Consider claim 4, and as applied to claim 3 above, Okawara teaches of an image sensor("image pickup elements", 201, 202, and 203, figure 6b). However, the combination of Okawara and Matsushima does not explicitly teach that the image sensor is a CMOS sensor.

McCaffrey et al. is similar to Okawara and Matsushima in that a camera is used(figure 1, column 3, lines 25-47), and that a histogram is produced(510, figure 5). McCaffrey et al. is also similar in that the camera is adjusted to improve images with high luminosity and low dynamic range(512, figure 5, column 6, line 27 through column 7, line 11).

In addition to the teachings of Okawara and Matsushima, McCaffrey et al. teach that the image sensor is a CMOS image sensor(110, figure 1, column 3, lines 25-47).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use a CMOS image sensor as taught by McCaffrey et al. as the image sensor taught by the combination of Okawara and Matsushima for the benefit that a CMOS imager and control circuitry can be fabricated on a single chip to conserve space, and a CMOS imager requires low power and still provides a high quality image(McCaffrey et al., column 1, lines 13-17).

Consider claim 8, and as applied to claim 5 above, Okawara teaches of an image sensor("image pickup elements", 201, 202, and 203, figure 6b). However, the combination of Okawara and Matsushima does not explicitly teach that the image sensor is a CMOS sensor.

McCaffrey et al. is similar to Okawara and Matsushima in that a camera is used(figure 1, column 3, lines 25-47), and that a histogram is produced(510, figure 5). McCaffrey et al. is also similar in that the camera is adjusted to improve images with high luminosity and low dynamic range(512, figure 5, column 6, line 27 through column 7, line 11).

In addition to the teachings of Okawara and Matsushima, McCaffrey et al. teach that the image sensor is a CMOS image sensor(110, figure 1, column 3, lines 25-47).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use a CMOS image sensor as taught by McCaffrey et al. as the image sensor taught by the combination of Okawara and Matsushima for the benefit that a CMOS imager and control circuitry can be fabricated on a single chip to

conserve space, and a CMOS imager requires low power and still provides a high quality image(McCaffrey et al., column 1, lines 13-17).

Consider claim 8, and as applied to claim 6 above, Okawara teaches of an image sensor("image pickup elements", 201, 202, and 203, figure 6b). However, the combination of Okawara and Matsushima does not explicitly teach that the image sensor is a CMOS sensor.

McCaffrey et al. is similar to Okawara and Matsushima in that a camera is used(figure 1, column 3, lines 25-47), and that a histogram is produced(510, figure 5). McCaffrey et al. is also similar in that the camera is adjusted to improve images with high luminosity and low dynamic range(512, figure 5, column 6, line 27 through column 7, line 11).

In addition to the teachings of Okawara and Matsushima, McCaffrey et al. teach that the image sensor is a CMOS image sensor(110, figure 1, column 3, lines 25-47). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use a CMOS image sensor as taught by McCaffrey et al. as the image sensor taught by the combination of Okawara and Matsushima for the benefit that a CMOS imager and control circuitry can be fabricated on a single chip to conserve space, and a CMOS imager requires low power and still provides a high quality image(McCaffrey et al., column 1, lines 13-17).

Consider claim 8, and as applied to claim 7 above, Okawara teaches of an image sensor("image pickup elements", 201, 202, and 203, figure 6b). However, the

combination of Okawara and Matsushima does not explicitly teach that the image sensor is a CMOS sensor.

McCaffrey et al. is similar to Okawara and Matsushima in that a camera is used(figure 1, column 3, lines 25-47), and that a histogram is produced(510, figure 5). McCaffrey et al. is also similar in that the camera is adjusted to improve images with high luminosity and low dynamic range(512, figure 5, column 6, line 27 through column 7, line 11).

In addition to the teachings of Okawara and Matsushima, McCaffrey et al. teach that the image sensor is a CMOS image sensor(110, figure 1, column 3, lines 25-47). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use a CMOS image sensor as taught by McCaffrey et al. as the image sensor taught by the combination of Okawara and Matsushima for the benefit that a CMOS imager and control circuitry can be fabricated on a single chip to conserve space, and a CMOS imager requires low power and still provides a high quality image(McCaffrey et al., column 1, lines 13-17).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert H. Cutler whose telephone number is (571)-270-1460. The examiner can normally be reached on Mon-Fri (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC

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SUPERVISORY PATENT EXAMINER